NEW NEOTROPICAL SPECIES OF OXYETHIRA (TRICHOPTERA: HYDROPTILIDAE)¹

ROBERT W. KELLEY

Department of Entomology, Fisheries and Wildlife, Clemson University, Clemson, South Carolina 29631.

Abstract.—Seventeen new species of Oxyethira from the Neotropical Region are described and illustrated. Included are four species from the Santiagensis Group (O. dactylonedys from Paraguay; O. scaeodactyla from Ecuador; O. arctodactyla from Venezuela; O. costaricensis from Costa Rica), four species from the Macrosterna Group (O. colombiensis from Colombia and Ecuador; O. paritentacula from Belize; O. merga from Venezuela; O. bicornuta from Brazil), four species from the Pallida Group (O. discaelata from Venezuela and Brazil; O. spissa and O. brasiliensis from Brazil; O. circaverna from Panama and Ecuador), three species from the Aeola Group (O. vipera from Chile; O. andina from Argentina and Chile; O. maryae from Colombia), one species from the Azteca Group (O. parazteca from Ecuador), and one species of uncertain affinities (O. quinquaginta from Ecuador).

The genus *Oxyethira* was previously known in the Neotropical Region from a total of 16 endemic species. A large proportion of these were described from faunal studies of Caribbean Isles, including Cuba (Botosaneanu, 1979), Jamaica (Flint, 1968a), Dominica (Flint, 1968b), and Puerto Rico (Flint, 1964). Similar faunal investigations have been done for Mexico (Mosely, 1939), Surinam (Flint, 1974), Brazil (Mosely, 1937), and Argentina (Flint, 1980). A total of 17 new species from throughout the Neotropical Region are described here, arranged according to species groups adapted from the study by Marshall (1979).

These specimens are from a number of different collecting expeditions and have accumulated at the National Museum of Natural History, Washington, D.C. (USNM). Type-specimens are deposited in that institution. Species are described primarily on the basis of male genitalia. Morphological terms used here are adapted from the work by Nielsen (1957); the major structures are indicated in Figs. 1A, 2A. Although females have been associated for most of these species they will be described in a subsequent paper.

SANTIAGENSIS GROUP

This Neotropical group of Oxyethira was previously known only from one species, O. santiagensis Flint. Males of this group bear elongate, finger-like clasp-

¹ Technical contribution no. 2021 of the South Carolina Agricultural Experiment Station, Clemson University.

ers. The group seems to be a sister lineage of the Macrosterna Group with which it shares in having the ninth segment elongate anteroventrally and the number of antennal segments reduced to 27–31. Four new species are described here.

Oxyethira dactylonedys Kelley, New Species Fig. 1

Diagnosis.—The separation of the claspers by a deep mesal excision places this species closest to *O. santiagensis*. It differs from that species in bearing distinct rodlike processes on segment IX, in having the subgenital plate excised distally, and in the pointed sclerotized process of the aedeagus.

Description.—Male. Length 2.8 mm. Brown color in alcohol. Antenna 28-segmented. Segment VII with ventral apico-mesal process. Segment VIII deeply excised ventrally. Segment IX attenuate dorsolaterally, produced into rodlike process; dorsum lacking; extending anteroventrally to anterior end of segment VII; claspers elongate, finger-like, slightly divergent distally; dorsad of claspers segment IX produced mesally, ending in 2 pointed, divergent, mesal lobes enclosed by 2 blunt lateral lobes. Subgenital plate with distal arms fused; bilobed process present ventrally. Aedeagus membranous distally; distal, sinuate, sclerotized process present dorsally.

Type-material.—Holotype &: PARAGUAY, Amambay Dept., Rio Aquidaban, Cerro Cora. 29 Nov 1973. O. S. Flint, Jr. Paratype: same data as holotype, 1 &. Etymology.—Greek: "finger-belly," referring to the long claspers, reminiscent of fingers.

Oxyethira scaeodactyla Kelley, New Species Fig. 2

Diagnosis.—Unlike O. santiagensis and O. dactylonedys the claspers in this species are proximally contiguous. It also differs in the anteroventral portion of segment IX which extends only midway into segment VII, in the deeply excised dorsum of segment VIII, and the unfused distal arms of the subgenital plate.

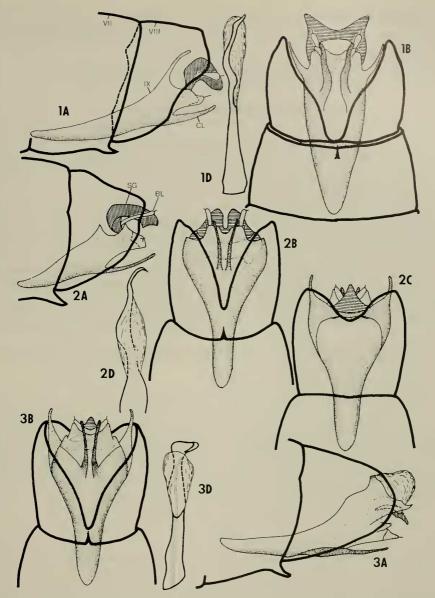
Description.—Male. Length 3.0 mm. Brown color in alcohol. Antenna 28-segmented. Segment VII with ventral apico-mesal process. Segment VIII deeply excised ventrally and dorsally. Segment IX extending anteroventrally halfway into segment VII; dorsum lacking; dorsolaterally terminated in paired acute points; claspers finger-like, narrow, contiguous at base; dorsad of claspers segment extending posteriorly, excised mesally, with short membranous processes at lateral corners. Subgenital plate with distal arms blunt, unfused; bilobed process present below subgenital plate. Aedeagus short, with sclerotized band ventrally tapering to distally curved sclerotized process.

Type-material.—Holotype & ECUADOR, Pastaza Prov., Puyo. 16 May 1977. P. J. Spangler & D. R. Givens. Paratype: same data as holotype, 1 &.

Etymology.—Greek: "western-fingered," suggests the species belongs in the Santiagensis Group, with finger-like claspers, in the western part of the continent.

Oxyethira arctodactyla Kelley, New Species Fig. 3

Diagnosis.—This species is closely related to *O. scaeodactyla*. Both the aedeagus and the claspers closely resemble those of that species. Differences can be seen in segment IX which is complete dorsally and bears pointed dorsolateral processes.



Figs. 1-3. Male genital segments. 1, Oxyethira dactylonedys. 2, O. scaeodactyla. 3, O. arctodactyla. A, Lateral view. B, Ventral view. C, dorsal view. D, Aedeagus, dorsal view. BL = bilobed process, CL = clasper, SG = subgenital plate.

Description.—Male. Length 4.0 mm. Brown color in alcohol. Antenna 28-segmented. Segment VII with ventral apico-mesal process. Segment VIII deeply excised ventrally, shallowly excised dorsally. Segment IX with dorsum a narrow band, extending anteroventrally to anterior end segment VII; claspers finger-like, narrow, proximally contiguous; dorsad of claspers meson of segment moderately excised posteriorly. Subgenital plate roughly triangular in shape, with bilobed process present ventrally. Aedeagus short with sclerotized venter tapering to a point, sharply recurved distally.

Type-material.—Holotype &: VENEZUELA, Mérida State, Mucujun Valley, 19 km NE Merida. 21 Feb 1976. C. M. & O. S. Flint, Jr. Paratypes: same data as holotype, 3 &.

Etymology.—Greek: "northern-fingered," which relates its position as a member of the Santiagensis Group from the northern part of the continent.

Oxyethira costaricensis Kelley, New Species Fig. 4

Diagnosis.—The lateral processes on segment IX are similar to those of *O. arctodactyla*. However, these processes are distinctly downturned in this species whereas they are horizontal in *O. arctodactyla*. In addition the dorsum of segment IX is absent, unlike *O. arctodactyla*.

Description.—Male. Length 2.9 mm. Brown color in alcohol. Number of antennal segments unknown. Venter VII with apico-mesal process. Segment VIII deeply excised ventrally, shallowly excised dorsally; blunt dorsolateral points present. Segment IX with venter truncate anteriorly, produced to anterior end segment VII; dorsum lacking; laterally produced into attenuate downturned processes; meson of venter moderately excised distally; claspers elongate, finger-like, not basally contiguous. Subgenital plate with distal arms fused; bilobed process present. Aedeagus membranous distally, with sclerotized venter extended into tapering point.

Type-material.—Holotype &: COSTA RICA, Heredia Prov., Los Cartagos, in stream. 24 Jun 1967. Spangler.

Etymology. - Latin: "of Costa Rica."

MACROSTERNA GROUP

Three species were previously known from this Neotropical group; O. jamaicensis Flint, O. longissima Flint, and O. macrosterna Flint. Along with the new species described below they share in having the ninth segment elongate anteroventrally at least into segment VI and in bearing paired distal processes bordering the distal membranous region of the aedeagus.

Oxyethira colombiensis Kelley, New Species Fig. 5

Diagnosis.—The greatly elongate processes of the aedeagus indicate this species to be most closely related to *O. longissima*. However, these paired lateral processes appear hooklike distally and do not recurve back to their bases as in *O. longissima*.

Description.—Male. Length 2.3 mm. Brown color in alcohol. Antenna 26-segmented. Apico-mesal process present on venter VII. Segment VIII excised half its length ventrally, excised to anterior margin dorsally. Segment IX elongate anteroventrally into segment V; dorsum lacking; dorsolateral margins acutely pointed; slightly excised posteroventrally with blunt claspers. Subgenital plate with arms fused distally such that distal margin appears 3-lobed in ventral view; 2 bilobed processes present. Aedeagus greatly elongate, its proximal end at posterior margin of segment II; a pair of long lateral rods present distally, hooklike at ends, membranous distomesal region stomach shaped in lateral view.

Type-material.—Holotype &: COLOMBIA, Valle Dept., Rio Raposo. Apr 1964. V. H. Lee. Paratypes: ECUADOR, Los Rios Province, Quevedo (56 km N), 28-

29 Jul 1976. 7 & Jeffrey Cohen. COLOMBIA, Valle Dept., Rio Raposo. Aug 1965. 1 & V. H. Lee.

Etymology. - Latin: "of Colombia."

Oxyethira paritentacula Kelley, New Species Fig. 6

Diagnosis.—This is one of several species in the Macrosterna Group in which paired dorsolateral processes are present on segment VIII. In this species these processes are stout and widely separated basally.

Description.—Male. Length 2.6 mm. Brown color in alcohol. Antenna 29-segmented. Ventral apico-mesal process of segment VII truncate. Segment VIII excised to proximal end both dorsally and ventrally; paired dorsolateral processes, attenuated distally and widely separated basally. Segment IX elongate anteroventrally into segment VI; dorsolaterally tapered into paired recurved rods; claspers blunt with deep excision between them. Subgenital plate with distal arms fused, distomesally knoblike. Aedeagus with long, tapering, lateral rods; in lateral view rods recurve dorsally.

Type-material.—Holotype & BELIZE, Cayo Dist., Rio Privassion, Blancaneaux Lodge. 9–11 Jul 1973. Y. Sedman.

Etymology.—Latin: "equal feelers," referring to the paired distolateral rods of the aedeagus, which look like tentacles.

Oxyethira merga Kelley, New Species Fig. 7

Diagnosis.—In most characters this species is similar to *O. paritentacula*. It differs in the forked dorsolateral processes of segment VIII, the forked lateral processes of the aedeagus, and the distolateral spines on segment VIII.

Description.—Male. Length 2.2 mm. Antenna 27-segmented. Ventral apicomesal process of segment VII truncate. Segment VIII deeply excised ventrally; 3 spines present distolaterally; dorsally the segment appears generally trilobed, the central lobe being divided distally into narrow mesal processes curving laterally and 2 processes laterad of these curving mesally. Segment IX elongate anteroventrally into segment V; attenuated processes dorsolaterally; claspers bluntly triangular. Subgenital plate with distal arms fused and paired distal cusps submesally; bilobed process present. Aedeagus long, with a pair of bifurcate distolateral rods.

Type-material.—Holotype & VENEZUELA, Bolivar State, Rio Cuyuni, El Dorado. 10 Feb 1976. C. M. & O. S. Flint, Jr.

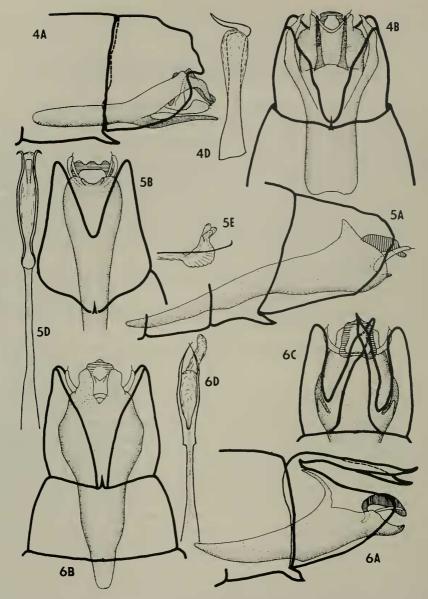
Etymology.—Latin: "pitchfork," referring to the paired, bifurcate rods of the aedeagus.

Oxyethira bicornuta Kelley, New Species

Fig. 8

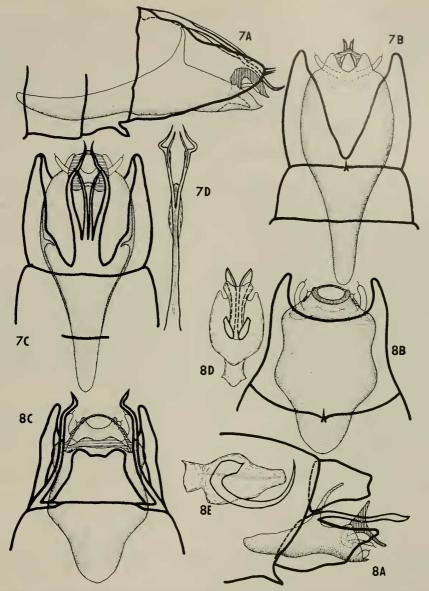
Diagnosis.—An aberrant member of the Macrosterna Group, this species bears a short, stout aedeagus of peculiar structure. The dorsolateral processes of segment VIII, although similar to those of *O. merga* and *O. paritentacula*, are separated by a wide tergum.

Description.-Male. Length 2.3 mm. Brown color in alcohol. Antenna 27-



Figs. 4-6. Male genital segments. 4, Oxyethira costaricensis. 5, O. colombiensis. 6, O. paritentacula. A, Lateral view. B, Ventral view. C, Dorsal view. D, Aedeagus, dorsal view. E, Aedeagus, lateral view.

segmented. Segment VII with ventral apico-mesal process. Segment VIII with sternum only slightly excised ventrally; anterolaterally sternum extended into long narrow processes, slightly widened distally; tergum touching sternum anterolaterally. Segment IX extending into segment VII anteroventrally; laterally tapered into narrow process curving posterodorsally; claspers blunt, short. Subgenital plate with dorsal arms fused and narrowed; 2 bilobed processes. Aedeagus short, bul-



Figs. 7, 8. Male genital segments. 7, Oxyethira merga. 8, O. bicornuta. A, Lateral view. B, Ventral view. C, Dorsal view. D, Aedeagus, dorsal view. E, Aedeagus, lateral view.

bous; central membranous tube visible dorsally, forked distally; sclerotized lateral processes, strongly curved dorsally.

Type-material.—Holotype & BRAZIL, Amazonas State, Igarape do Mendu, nr. Manaus. 28 Jan 1979. O. S. Flint Jr. Paratypes: BRAZIL, Flores, nr. Manaus. 31 Jan 1979. 1 & Res. Ducke, 26 km E Manaus. 1–5 Feb 1979. 2 & O. S. Flint, Jr.

Etymology.—Latin: "two-horned," because of the sclerotized processes of the aedeagus which are shaped like horns as seen in lateral view.

PALLIDA GROUP

This group is both Nearctic and Neotropical. It is closely related to the Ulmeri Group with which it shares a distinct wing character: fused R_4 and R_5 . There are two subgroups. One of these, including *O. pallida* (Banks), *O. maya* Denning, and *O. alaluz* Botosaneanu, is characterized by lateral processes on segment IX. Species of the other, including *O. verna* Ross, *O. arizona* Ross, and *O. tega* Flint, lack lateral processes on segment IX and bear a sclerotized bridge between the distal arms of the subgenital plate. New species are now added to both subgroups.

Oxyethira discaelata Kelley, New Species Fig. 9

Diagnosis.—The sclerotized bridge between the distal arms of the subgenital plate and the lateral processes of segment VIII indicate this species to be closely related to *O. arizona*. It can be separated on the basis of the lateral contour of segment VIII, the dorsolateral process of the subgenital plate, and the shape of the distal end of the aedeagus.

Description.—Male. Length 1.8 mm. Brown color in alcohol. Number of antennal segments unknown. Venter of segment VII with apico-mesal process. Segment VIII short, deeply excised ventrally and dorsally; 2 acute points laterally, separated by an excision. Segment IX extending anteroventrally into segment VI; truncate dorsolaterally; dorsum not sclerotized; claspers triangular shaped and diverging. Subgenital plate with sclerotized bridge between distal arms; dorsolateral processes curving mesally; bilobed process present. Aedeagus with bulbous region proximally, tapered distally to sinuous sclerotized process; sclerotized band parallel to sinuous process attached to aedeagus only by membrane.

Type-material.—Holotype & VENEZUELA, Bolivar State, Morichal Tauca, 22 km E Rio Caura. 8–9 Feb 1976. C. M. & O. S. Flint, Jr. Paratype: BRAZIL, Amazonas State, Rio Cuieiras bei der Mündung do Rio Branquiutos, 20 Dec 1961. 1 & Fittkau.

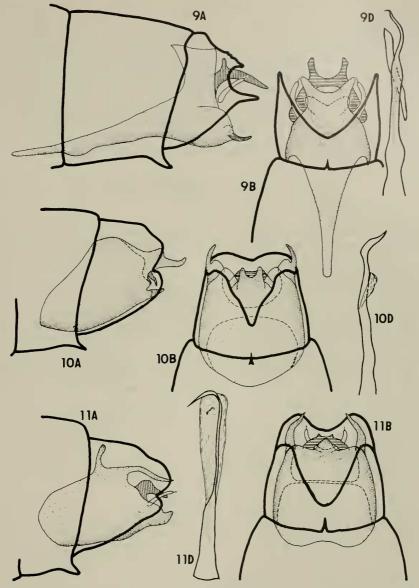
Etymology.—Latin: "poorly covered," for the lack of a sclerotized dorsum on segment IX.

Oxyethira spissa Kelly, New Species Fig. 10

Diagnosis.—This species is related to the Pallida Subgroup. It differs primarily in the shape of the posterolateral process of segment IX, which is attenuate, and the truncated anterior margin of venter IX.

Description.—Male. Length 2.3 mm. Brown color in alcohol. Number of antennal segments unknown. Segment VII with apico-mesal process. Segment VIII deeply excised ventrally; 2 blunt lobes laterally. Segment IX extending anteroventrally into segment VII; dorsum reduced to narrow band; posterolateral processes prominent, with rounded knob basally and slightly upturned distally; claspers short. Subgenital plate small, downturned distally, with distal arms fused; bilobed processes present. Aedeagus simple, tapered and curved distally.

Type-material.—Holotype & BRAZIL, Pará State, Rio Cururu, area of Missao Cururu. 3-5 Feb 1961. Fittkau. Paratype: BRAZIL, Amazonas State, Rio Preto, Tiririca. 7 Jul 1962. 1 & Fittkau.



Figs. 9-11. Male genital segments. 9, Oxyethira discaelata. 10, O. spissa. 11, O. brasiliensis. A, Lateral view. B, Ventral view. D, Aedeagus, dorsal view.

Etymology.—Latin: "slow," "late" or "tardy," because in preparing this paper, this species was one of the last to be found.

Oxyethira brasiliensis Kelley, New Species

Fig. 11

Diagnosis.—The two blunt lateral lobes of segment VIII, the fused distal arms of the subgenital plate, and the truncate anteroventral margin of segment IX are

all similar to *O. spissa*. However, the claspers are distinctly fused into a mesal triangular lobe.

Description.—Male. Length 2.3 mm. Brown color in alcohol. Antenna 39-segmented. Segment VII with blunt apico-mesal process. Segment VIII complete, deeply excised ventrally; 2 blunt lobes laterally. Segment IX extending anteroventrally into segment VII; dorsum reduced to narrow band; lateral process curved ventrally; claspers fused into mesal triangular lobe. Subgenital plate with distal arms fused; bilobed process present. Aedeagus with sinuous process distally.

Type-material.—Holotype & BRAZIL, Pará State, Rio Cururu, area of Missao Cururu. 3–5 Feb 1961. Fittkau. Paratype: same data as holotype, 1 &.

Etymology. - Latin: "of Brasil."

Oxyethira circaverna Kelley, New Species

Fig. 12

Diagnosis.—Although this species lacks the sclerotized bridge between the distal arms of the subgenital plate, it resembles *O. verna* Ross and *O. arizona* Ross in the dorsolateral processes of segment VIII and the anterolateral elongation of the same segment into segment VII.

Description.—Male. Length 2.6 mm. Brown color in alcohol. Number of antennal segments unknown. Segment VII with ventral apico-mesal process. Tergum VIII with ventrolateral, upturned, hooklike processes, bifurcate distally; sternum with dorsolateral spatulate processes; ventrolateral edges of segment produced anteriorly into segment VII. Segment IX extended into segment VI anteroventrally; dorsum a narrow band; claspers short, parallel, narrowly separated. Subgenital plate with distal arms unfused, diverging. Aedeagus produced into 2 long distal processes, partly entwined.

Type material.—Holotype & PANAMA, Canal Zone, Madden Dam. 10–13 Jul 1967. O. S. Flint, Jr. Paratype: ECUADOR, Napo Prov., Puerto Montufar. 29 Apr 1976 1 & J. Cohen.

Etymology. - Latin: "near verna," named for its similarity to O. verna.

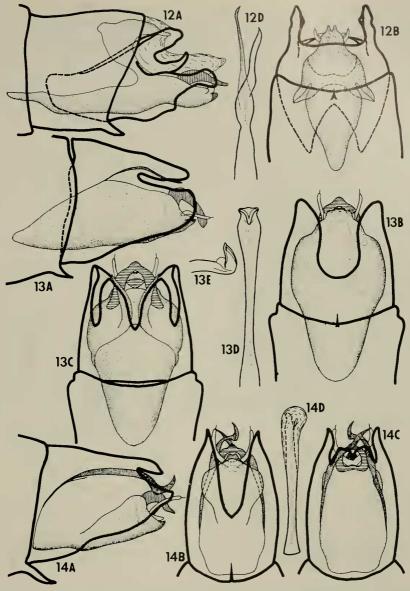
AEOLA GROUP

Although most species of this group are Nearctic, one previously known species, O. bidentata (Mosely), shares the characteristic dorsolateral rodlike processes of the group. Two new species, closely related to O. bidentata, are now described. All three of these species are found in the southern Andes. Closely related to this group is another group of species including O. dualis Morton, O. obscura Flint, and O. sininsigne Kelley. A new species of this group is described here as well.

Oxyethira vipera Kelley, New Species Fig. 13

Diagnosis.—In both the presence of dorsolateral rodlike processes of segment IX and the bilobed distolateral margin of segment VIII, this species is similar to *O. bidentata*. However, the dorsolateral rods are flattened. Furthermore, venter IX is pointed anteroventrally rather than excised between the bases of the rods.

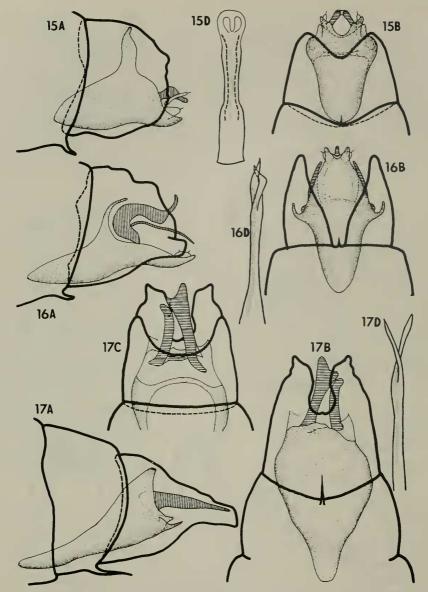
Description.—Male. Length 3.3 mm. Brown color in alcohol. Antenna 34-segmented. Venter VII with apico-mesal process. Segment VIII bilobed laterally; deeply excised ventrally. Segment IX protruded anteriorly into segment VII; dor-



Figs. 12–14. Male genital segments. 12, Oxyethira circaverna. 13, O. vipera. 14, O. andina. A, Lateral view. B, Ventral view. C, Dorsal view. D, Aedeagus, dorsal view. E, Aedeagus, lateral view.

solateral margins extended into a pair of flattened processes subtending the mesal margins of dorsolateral processes of segment VIII; claspers fused medially with distal margin blackened. Subgenital plate with distal arms mesally fused into nipple-shaped point; bilobed process long. Aedeagus widened and upturned distally.

Type-material.—Holotype & CHILE, Valdavia Prov. S of Valdavia. 23 Oct 1969. Flint and Barria.



Figs. 15-17. Male genital segments. 15, Oxyethira maryae. 16, O. parazteca. 17, O. quinquaginta. A, Lateral view. B, Ventral view. C, Dorsal view. D, Aedeagus, dorsal view.

Etymology. — Latin: "snake," because the aedeagus is distally shaped like a snake in dorsal view.

Oxyethira andina Kelley, New Species Fig. 14

Diagnosis.—This species bears the dorsolateral rods of segment IX found in O. bidentata and O. vipera as well as having the claspers fused mesally. It is distinct in that the rods are not bilaterally symmetrical.

Description.—Male. Length 2.7 mm. Brown color in alcohol. Antenna 38-segmented. Apico-mesal process on venter VII elongate. Segment VIII bilobed laterally; deeply excised ventrally. Segment IX truncate anteriorly; laterally produced into broadly rounded lobe; dorsum lacking; anterior dorsolateral margins produced into elongate asymmetrical rods which cross posteriorly; claspers fused mesally. Subgenital plate with distal arms fused forming nipple-shaped process; bilobed process elongate. Aedeagus membranous distally, sclerotized band ventrally.

Type-material.—Holotype &: ARGENTINA, Rio Negro Prov., Rio Guillelmo, Villa Mascardi. 6 Feb 1974. O. S. Flint, Jr. Paratypes: Neuquén Prov., Lago Rucachoroi, W. Alumine. 1–2 Mar 1978. 1 &. C. M. & O. S. Flint, Jr. CHILE, Llanquihue Prov., Petrohue. 10 Mar. 1959. 4 &. J. F. Clarke.

Etymology.—Latin: "Andean."

Oxyethira maryae Kelley, New Species Fig. 15

Diagnosis.—The shapes of the dorsum of segment IX and the aedeagus, as well as the unfused arms of the subgenital plate are close to those of *O. sininsigne* Kelley. However, the claspers are distinctly shaped and segment VIII is shorter in length than for *O. sininsigne*.

Description.—Male. Length 2.1 mm. Brown color in alcohol. Antenna 27-segmented. Apico-mesal process on venter VII. Segment VIII with posterolateral margin somewhat irregular; venter shallowly excised. Segment IX rounded anteroventrally; dorsum a narrow band; claspers truncate, with distolateral edges produced into points. Subgenital plate with distal arms nearly fused; bilobed process present. Aedeagus short, distally membranous, with sclerotized ventral band.

Type-material.—Holotype &: COLOMBIA, Meta Dept., Refugio Macarena. 10 Jan 1966. C. J. Marinkelle.

Etymology.—This species is named for my daughter, Mary.

AZTECA GROUP

Previously known Neotropical species of this group are *O. azteca* (Mosely), *O. janella* Denning, *O. glasa* (Ross), *O. puertoricensis* Flint, *O. quelinda* (Botosaneanu), *O. dalmeria* (Mosely), and *O. zilaba* (Mosely). They are characterized by an elongate subgenital plate, often subtended by a triangular, partially sclerotized, mesal plate. One new species is now added.

Oxyethira parazteca Kelley, New Species Fig. 16

Diagnosis.—This species seems to be most closely related to *O. azteca* and *O. dalmeria*. It can be readily separated on the basis of the distal upcurved arms of the subgenital plate and the paired, entwined distal lobes of the aedeagus.

Description.—Male. Length 2.5 mm. Brown color in alcohol. Number of antennal segments unknown. Segment VII with ventral apico-mesal process. Segment VIII ventrally cleft to anterior margin; bluntly excised dorsally; truncate lobe ventrolaterally. Segment IX lacking dorsum; dorsolateral processes curved posterodorsally; extending anteroventrally into segment VII; claspers short. Subgenital plate with distal arms unfused and with distal ends curving dorsally; acu-

minate, partly sclerotized mesal plate present ventrally to subgenital plate. Aedeagus with paired, entwined, tapering distal lobes.

Type-material.—Holotype & ECUADOR, Cotopaxi Prov., Latacunga (133 km W) 1080'. 2 Jul 1975. At blacklight. Langley & Cohen. Paratype: same data as holotype, 1 &.

Etymology.—Latin: "like azteca," because of the similarity of this species to O. azteca.

INCERTAE SEDIS

Oxyethira quinquaginta Kelley, New Species Fig. 17

Diagnosis.—In many respects this species is aberrant. Aberrations include the elongate process of segment VII, the vestigial claspers, the asymmetrical distal arms of the subgenital plate, and the number of antennal segments. Its position within the genus remains unclear.

Description.—Male. Length 3.3 mm. Brown color in alcohol. Antenna 50-segmented. Segment VII with elongate ventral apico-mesal process. Segment VIII with urn-shaped excision ventrally; tapered to truncate process laterally. Segment IX completely withdrawn within abdomen; extending anteroventrally into segment VI; dorsum reduced to narrow band; posteroventral margin irregular with claspers vestigial. Subgenital plate with left distal arm broad distally and right distal arm tapered to point. Aedeagus with long, paired distal processes.

Type-material.—Holotype & ECUADOR, Pastaza Prov., Puyo, riverside at blacklights. 29 May 1975. Cohen & Langley. Paratype: Pastaza Prov., Puyo (27 km N), Estacion Fluviometrica. 4 Feb 1976. 1 & Spangler et al.

Etymology.—Latin: "fifty," the number of antennal segments.

ACKNOWLEDGMENTS

Oliver Flint, Jr. has been of great help both in the loan of the specimens described in this paper as well as preliminary identification of many of the specimens as new species. The aid of John Morse in reviewing the paper is also appreciated.

LITERATURE CITED

- Botosaneanu, L. 1979. The caddis flies (Trichoptera) of Cuba and of the Isla de Pines. Stud. Fauna Curacao other Caribb. Isl. 59(185): 1–62.
- Flint, O. S., Jr. 1964. The caddisflies (Trichoptera) of Puerto Rico. Tech. Pap. Univ. P. R. Agric. Exp. Stn. 40:1–80.
 - ——. 1968a. The caddisflies of Jamaica (Trichoptera). Bull. Inst. Jam. Sci. Ser. 19: 1-68.
- ——. 1968b. Bredin-Archbold Smithsonian biological survey of Dominica, 9. The Trichoptera (caddisflies) of the Lesser Antilles. Proc. U.S. Natl. Mus. 125(3665): 1-86.
- . 1974. The Trichoptera of Surinam. Stud. Fauna Suriname other Guyanas 14: 1–151.
- ——. 1980. Studies on Neotropical caddisflies XXVI: New species from Argentina (Trichoptera). Rev. Soc. Entomol. Argent. 39(1–2): 137–142.
- Marshall, J. E. 1979. A review of the genera of the Hydroptilidae (Trichoptera). Bull. Br. Mus. (Nat. Hist.) Entomol. 39(3): 135–239.
- Mosely, M. E. 1937. The Brazilian Hydroptilidae (Trichoptera). Novit. Zool. 61: 217-239.
- ----. 1939. Mexican Hydroptilidae. (Trichoptera). Trans. R. Entomol. Soc. Lond. 86: 151-190.
- Nielsen, A. 1957. A comparative study of the genital segments and their appendages in male Trichoptera. Biol. Skr. Dan. Vidensk Selsk. 8(5): 1–159.